

WHAT IS CLAIMED IS:

1. A method of utilizing a geographical information system, the method comprising:

receiving input address information;

geocoding the input address information; and

outputting positional information in response to the geocoding step.

2. The method according to claim 1, further comprising retrieving requested information based upon the positional information.

3. The method according to claim 2, further comprising receiving selection criteria corresponding to the requested information, wherein the retrieving step is further based upon the selection criteria.

4. The method according to claim 2, further comprising:

validating the input address information; and

selectively outputting validated address information based upon the validating step.

5. The method according to claim 2, wherein the geocoding step comprises determining the positional information at a rooftop level in response to the validating step.

6. The method according to claim 5, wherein the geocoding step further comprises:

determining the positional information at a ZIP-9 level in response to invalid rooftop  
level validation; and

alternatively determining the positional information at a ZIP-5 level in response to invalid

5 ZIP-9 level validation.

7. The method according to claim 2, further comprising:

selectively generating a map graphic based upon the positional information; and

transmitting the map graphic and the requested information to a client station based upon

10 the selectively generating step.

8. The method according to claim 7, wherein the selectively generating step comprises:

interfacing a map database to retrieve mapping data corresponding to the positional

information; and

15 rendering the map graphic based upon the mapping data.

9. The method according to claim 2, further comprising interfacing with an applications client  
via a CORBA (Common Object Request Broker Architecture) object request broker (ORB).

20 10. The method according to claim 2, wherein the requested information comprises at least one of  
wire center data, rate center data, PSAP (Public Safety Answering Point) data, CAP (Competitive  
Access Provider) data, switch collocation data, and switch location data.

11. The method according to claim 2, further comprising:

displaying the requested information on a client station.

5 12. The method according to claim 7, further comprising:

supporting a graphical user interface (GUI) that is on a client station, the GUI providing zoom capability of the map graphic by performing at least one of (1) drawing a rectangle on the map graphic with a cursor and (2) positioning a cursor along a zoom bar.

10 13. The method according to claim 12, wherein a zoom distance is concurrently displayed corresponding to a position of the cursor.

14. The method according to claim 1, wherein the positional information in the outputting step comprises latitude/longitude information.

15 15. A geographic information system comprising:

an application server configured to receive input address information and selection criteria corresponding to requested information;

a database server communicating with the application server, the database server configured to validate and geocode the input address information, the database server outputting validated address information and positional information to the application server; and

a data source coupled to the database server, wherein the database server retrieves the requested information from the data source based upon the selection criteria and transmits the requested information to the application server, and

wherein the application server selectively generates a map graphic based upon validated address and positional information from the database server.

16. The geographic information system according to claim 15, wherein the application server is further configured to optionally provide map scaling information and generate the map graphic based upon the map scaling information.

17. A geographic information system comprising:

an application server configured to receive requested information including input address information;

a database server communicating with the application server, wherein the database server is configured to geocode the input address information; and

a data source coupled to the database server, wherein the database server is configured to retrieve the requested information based upon geocoded input address.

18. The system according to claim 17, wherein the application server is further configured to receive selection criteria which corresponds to the requested information, wherein the database server outputs validated address information and positional information to the application server,

and wherein the database server retrieves the requested information based upon the selection criteria.

19. The system according to claim 18, wherein the application server selectively generates a map  
5 graphic based upon the validated address and the positional information received from the database server and based upon map scaling information received from a client station.

20. The system according to claim 17, wherein the database server comprises a CORBA  
(Common Object Request Broker Architecture) object request broker (ORB) to interface with an  
10 applications client.

21. The system according to claim 17, wherein the database server comprises:  
an address validation and geocode module configured to validate and geocode the input  
address information; and

15 a spatial information database module configured to store and retrieve spatial data associated with the requested information.

22. The system according to claim 21, wherein the address validation and geocode module  
determines the positional information according to a predetermined order of precision based  
20 upon whether the input address information is valid.

23. The system according to claim 22, wherein the predetermined order of precision is at least one of rooftop, ZIP-9, and ZIP-5.

24. The system according to claim 19, wherein the application server comprises:

5 a map database containing mapping data; and

a mapping module configured to interface with the map database to retrieve the mapping data corresponding to the positional information and to generate the map graphic.

25. The system according to claim 19, wherein the application server further comprises a JAVA servlet to process the input address information, selection criteria corresponding to the requested information, and map scaling information from the client station.

26. The system according to claim 17, wherein the requested information comprises at least one of wire center data, rate center data, PSAP (Public Safety Answering Point) data, CAP (Competitive Access Provider) data, switch collocation data, and switch location data.

27. The system according to claim 19, wherein the application server supports a graphical user interface (GUI) on a client station, the GUI providing zoom capability of the map graphic by at least one of (1) drawing a rectangle on the map graphic with a cursor and (2) positioning the cursor along a zoom bar.

28. The system according to claim 27, wherein a zoom distance being concurrently displayed corresponding to a position of the cursor.

29. The system according to claim 19, wherein the application server supports a graphical user interface (GUI) on a client station, the GUI providing a movable map legend associated with the map graphic.

30. The system according to claim 17, wherein the application server supports a graphical user interface (GUI) on a client station, the application server providing a user with a plurality of push-pin icons for use in determining distance calculation representative of positions of the push-pin icons on a map graphic.

31. The system according to claim 17, wherein the application server and the database server communicates using TCP/IP (Transmission Control Protocol/Internet Protocol).

32. The system according to claim 17, wherein the positional information comprises latitude/longitude information.

33. A computer-readable medium carrying a sequences of instructions for utilizing a geographical information system, the sequences of instructions including instructions which, when executed by a processor, cause the processor to perform the steps of:

receiving input address information;

geocoding the input address information to generate positional information; and  
retrieving requested information based upon the positional information.

34. The computer-readable medium according to claim 33, wherein the processor further  
5 performs the steps of:

outputting positional information in response to the geocoding step; and  
receiving selection criteria corresponding to the requested information, wherein the  
retrieving step is further based upon the selection criteria.

35. The computer-readable medium according to claim 33, wherein the processor further  
10 performs the step of:

validating the input address information; and  
selectively outputting validated address information based upon the validating step.

36. The computer-readable medium according to claim 33, wherein the processor further performs  
15 the steps of:

selectively generating a map graphic based upon the positional information; and  
transmitting the map graphic and the requested information to a client station based upon  
the selectively generating step.

37. The computer-readable medium according to claim 36, wherein the selectively generating  
20 step comprises:



interfacing a map database to retrieve mapping data corresponding to the positional information; and

rendering the map graphic based upon the mapping data.

5 38. The computer-readable medium according to claim 33, wherein the processor further performs the steps of:

interfacing with an applications client via a CORBA (Common Object Request Broker Architecture) object request broker (ORB).

10 39. The computer-readable medium according to claim 35, wherein the geocoding step comprises determining the positional information at a rooftop level in response to the validating step.

15 40. The computer-readable medium according to claim 39, wherein the geocoding step further comprises:

determining the positional information at a ZIP-9 level in response to invalid rooftop level validation; and

alternatively determining the positional information at a ZIP-5 level in response to invalid ZIP-9 level validation.

20 41. The computer-readable medium according to claim 33, wherein the requested information comprises at least one of wire center data, rate center data, PSAP (Public Safety Answering Point)

data, CAP (Competitive Access Provider) data, switch collocation data, and switch location data.

42. The computer-readable medium according to claim 33, wherein the positional information comprises latitude/longitude information.

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43. A method of determining service availability using a geographical information system, the method comprising:

providing address information and a selection criterion;

retrieving requested information based upon the address information and the selection

10 criterion, the retrieving step comprising,

geocoding the address information, and

outputting positional information.

44. The method according to claim 43, further comprising:

15 validating the address information; and

selectively outputting validated address information based upon the validating step.

45. The method according to claim 43, further comprising selectively generating a map graphic based upon the positional information.

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46. The method according to claim 45, wherein the selectively generating step comprises:

interfacing a map database to retrieve mapping data corresponding to the positional information; and

rendering the map graphic based upon the mapping data.

47. The method according to claim 43, wherein the geocoding step comprises determining the positional information at a rooftop level in response to the validating step.

48. The method according to claim 47, wherein the geocoding step further comprises:

determining the positional information at a ZIP-9 level in response to invalid rooftop

level validation; and

alternatively determining the positional information at a ZIP-5 level in response to invalid ZIP-9 level validation.

49. The method according to claim 43, wherein the requested information comprises at least one of wire center data, rate center data, PSAP (Public Safety Answering Point) data, CAP (Competitive Access Provider) data, switch collocation data, and switch location data.

50. The method according to claim 43, wherein the positional information in the outputting step comprises latitude/longitude information.

51. The method according to claim 43, wherein the providing step comprises initiating a telephone call to a customer service representative (CSR).

52. The method according to claim 43, wherein the providing step comprises interfacing with the geographical information system using a web browser.

5 53. A memory for storing spatial data and requested information, comprising a data structure including:

an address table for storing input address information, the input address information being geocoded to generate positional information, the address table comprising a positional information field for storing the generated positional information; and

10 an information table for storing the requested information, the requested information being retrieved based upon the generated positional information.

54. The memory according to claim 53, wherein the information table comprises at least one of:

a CAP building table for storing vendor code data and capability data;

15 a PSAP (Public Safety Answering Point) table for storing PSAP spatial geometry data, agency data, and directory number information;

an exchange information table for storing wire center data, OCN (Operating Company Number) data, and exchange spatial geometry data;

20 a collocation information table for storing collocation switch data and switch capability data;

a switch information table for storing switch CLLI (Common Language Location Identification) code data, and LEC (Local Exchange Carrier) identification data;

a rate center table for storing rate center name data, and rate center spatial geometry data;

and

a customer information table for storing customer name data, directory number data, revenue data, address data, and customer positional information.